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THE PLANT DISEASE REPORTER

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NOTES ON RED CLOVER DISEASES

RELATIVE SUSCEPTIBILITY OF RED CLOVER AT WOOSTER, OHIO.

By L. R. Hesler

"A number of strains, foreign and native, are being grown at the Experiment Station farm at Wooster. The plots are in fiftieth-acre plantings and are replicated. Observations were made on August 25, 1925, with reference to relative susceptibility to powdery mildew (Erysiphe polygoni) anthracnose, root rot (undetermined) and leaf-spot (Macrosporium sarciniforme). In general, the results confirm those reported by Monteith (Phytopath. 14: 62-63, 1924.), especially with reference to the following points: (1) there is striking difference in amount of infection on different strains of red clovers; (2) some of the American clovers and some imported strains are fairly susceptible to powdery mildew and anthracnose while others are more resistant to these two diseases; (3) the strains of red clover observed showed reverse order of susceptibility to mildew and anthracnose, that is, if a given strain were somewhat resistant to mildew it showed fairly high susceptibility to anthracnose.

"With reference to anthracnose, it was noted that the density of the 'stand' was a factor; in all plots the disease was more abundant where the plants stood close together and was less abundant where plants were scattered. This relationship was taken into account in estimating amounts of disease in the several plots.

"Further points worthy of attention follow:- (1) Ohio seed produced clover highly susceptible to powdery mildew, although only slightly affected with other diseases (anthracnose, root rot, Macrosporium leaf-spot); (2) clovers from other states and from Canada, Chile and France were moderately attacked by the mildew fungus; (3) Roumanian, Italian and Hungarian clover strains were least affected with mildew; (4) among native clovers, Wisconsin strain showed greatest infection of anthracnose, while Roumanian and Chilean strains were most susceptible of the foreign types; (5) Those showing least anthracnose damage were Tennessee, Michigan, Ohio, Oregon; Canadian, Italian, French."

Table 7. Showing relative susceptibility of red clover strains to disease.

Source of seed	Powdery mildew	Anthracnose	Rootrot*	Macrosporium leaf-spot
Michigan	M	S	S	S
Wisconsin	M	M	O	S
Michigan	M	S	S	S
Ohio	H	S	S	S
Tennessee	M	S	S	S
Oregon	M	S	S	S
Michigan	M	S	S	S
Oregon	M	S	S	S
Canada	M	S	O	S
Roumania	S	M	S	S
Italy	S	S	S	S
Chile	M	M	S	S
France	M	S	S	S
Hungary	S	S	S	S

*Cause not definitely determined.

Key: H - heavy infection S - slight
M - moderate O - none.

OTHER REPORTS ON APPLE SCAB (VENTURIA INAEQUALIS)

Ohio: Apple scab is of minor importance this year where any type of spraying or dusting has been done. Weather conditions were not favorable for its development. (H. C. Young, Sept. 1)

Wisconsin: Less than usual. Crop is very little damaged from this cause. (Vaughan, Sept. 1)

Arkansas: Of no commercial importance this year. (V. H. Young, Sept. 1)

Washington: Apple scab has been very scarce in eastern Washington and much less common and severe than usual in the western part of the state. (Dept. Pl. Path., Sept. 15)

APPLE BITTER ROT (GLOMERELLA CINGULATA) REPORTED FROM OHIO AND ARKANSAS

Ohio: Bitter rot is quite severe in the southeastern part of the state in only a few sections. The wet season during the latter part of July and early August seemed to make it rather difficult to control it completely. (H. C. Young, Sept. 1)

Arkansas: Almost entirely absent this year. Reported only once as doing damage on Grimes. (V. H. Young, Sept. 1)

APPLE BLOTCH (PHYLLOSTICTA SOLITARIA) PREVALENT IN SOUTHERN OHIO

"Blotch is more general throughout the southern part of the state than it has been for several years and is causing considerable loss." (Young, Sept. 1)

TWO REPORTS OF CROWNGALL (BACTERIUM TUMEFACIENS) ON GRAPE

Michigan: In general this disease is of minor importance, but two vineyards have been located in which 70% of the plants in some rows have galls. In such cases the loss is severe. (Bennett)

New Mexico: Common wherever grapes are grown. Aerial galls. Causes considerable loss of vigor. (Crawford)

DOWNY MILDEW OF GRAPE (PLASMOPARA VITICOLA)

Reports of downy mildew on grape were received from Massachusetts August 1 and from Maryland, Ohio and Michigan, September 15. In no case was it causing serious damage although in Maryland it was observed causing prematuring, curling, and dropping of leaves of the Niagara variety in one vineyard.

PEAR DISEASES IN MICHIGAN

C. W. Bennett reports on the situation September 15.

Frost injury

"Frost injury causing a 'banding' of the fruit is common in nearly all parts of the state. In some orchards more than 50% of the fruit will show some form of frost marking."

Leafspot (Mycosphaerella sentina)

"Present in nearly all orchards but of no economic importance."

Fireblight (Bacillus amylovorus)

"Blight is quite common but perhaps no more serious than in an average season."

Scab (Venturia pyrina)

"There is very little scab present. Susceptible varieties, even when unsprayed show a very small amount of this disease."

DELAYED EFFECT OF WINTER INJURY NOTED ON PRUNES IN WASHINGTON

"Italian prunes in the Walla Walla section particularly and also more or less generally over eastern and central Washington had shown a particularly heavy drop at the time the fruits were nearly full grown. Many of the fruits not dropping showed drought spot or gum spot in the flesh of the fruit. The condition was analyzed to be largely the result of severe winter injury to the trees during December 1924. This delayed effect of winter injury reduced the yield of marketable fruit to a small fraction of what was expected by growers. Injury was also apparent on the tree in the form of delayed effect of injury to twigs and branches. On the branches the progressive effect of winter injury became evident after the advent of dry hot weather. On those branches where this progressive yellowing and death took place the entire set of fruit either dropped off or was of such poor quality as to be of no value.

"This delayed effect of winter injury coupled with the reduced set of fruit caused by spring frosts was a severe blow to the industry in the affected regions." (Dept. Pl. Path., Sept. 15)

NOTES ON TOBACCO DISEASES IN WISCONSIN

James Johnson reports as of September 1

Rootrot (Thielavia basicola)

"Rootrot occurred to a considerable extent this year on the older tobacco soils being favored by a relatively cool season in June and early July. Occasional fields were complete losses, but more frequently the disease damaged the crops from 5 to 50%. I would estimate that only about 10% of the fields were affected, however."

Wildfire (Bacterium tabacum)

"Wildfire did little damage this year due to dry weather in May which did not favor seed bed infection and dry weather in August. The absence of storms was also unfavorable for disease spread. Disease present on about 50 farms."

Blackfire (Bacterium angulatum)

"Less blackfire than last year, more commonly present than wildfire, but little damage done this year."

Ringspot (undetermined)

"A disease probably of physiological origin occurred frequently in portions of fields and caused considerable concern. Disease practically new in Wisconsin. Plants usually recovered so that only 3 to 5 leaves per plant damaged, by becomming ragged."

Brown rootrot (undetermined)

"Tobacco on sod failed to grow properly in about 90% of the cases. The roots frequently rot. Timothy sods are worst. A soil toxin may be concerned. About 20% of the fields in Wisconsin more or less affected in this manner."

Damping-off (Pythium and Rhizoctonia)

"Practically no damage this year."

TOBACCO DROUGHT SPOT IN VIRGINIA

"This is becoming very general in sections where there has been a marked deficiency in rainfall, especially in Appomattox and Halifax Counties. It is characterized by the burning of leaf margins and the development of large single or fused spots in the intercostal regions." (Fromme, Sept. 15)

NOTES ON THE OCCURRENCE AND PREVALENCE OF TOBACCO DISEASES IN CANADA, 1925.

By C. M. Slagg and T. G. Major

Damping-off - Quite common in the Quebec districts and in parts of the Ontario district. As a result of improved methods of seedbed management in Quebec the disease was not as prevalent as in previous years.

Black root-rot (Thielavia basicola) - Quite common in the seedbeds in Quebec and to a limited extent in Ontario. Owing to the comparatively dry season there was considerably less injury in the field than in 1924 in Quebec and Ontario. Present to a limited extent in British Columbia.

Wildfire (Bacterium tabacum) - Found on six farms near St. Cesaire, Quebec. Owing to the dry weather during the month of August the damage was light. This is the first positive record of the occurrence of this disease in Canada.

Angular leafspot (Bacterium angulatum) - Present to a limited extent in the Quebec and Ontario districts. The infection was scattered and mostly confined to the lower leaves.

Hollow stalk - A few scattered cases of this disease occurred in both Ontario and Quebec. In only one instance was the injury at all severe, in this case about 5% of the plants in one field being affected.

Mosaic - Fairly common in Quebec and Ontario and present to a limited extent in British Columbia. Not as prevalent as in 1924.

Curly dwarf - A few scattered instances were observed in Ontario.

CONFERENCE FOR THE STUDY OF POTATO MOSAIC, LEAFROLL, SPINDLE TUBER, AND RELATED DISEASES TO BE HELD AT LINCOLN, NEBRASKA, DECEMBER 28, 1925.

An invitation to persons interested in potato diseases of the so-called virus type has been extended by the Department of Plant Pathology of the Nebraska Experiment Station to attend a one day conference at Lincoln, December 28, 1925. This is the day preceding the opening of the annual meeting of the American Phytopathological Society at Kansas City. It is planned, and has been requested, that men working on these diseases send tubers showing the various types of disease to Lincoln where they will be grown under controlled environmental conditions in the greenhouse. On the day of the conference each investigator who has sent in diseased material will discuss and compare the symptoms of the disease as they appear in the greenhouse with those which he has observed under field conditions. This will allow each person to acquaint himself with the symptoms and a better understanding of the nature of the diseases should be obtained.

The object of the conference has been stated by Drs. G. L. Peltier, and R. W. Goss as follows:

"(1) To secure a knowledge of the symptoms of each of the degeneration diseases and combinations of these diseases, on different varieties.

"(2) To arrive at a standard method of describing symptoms of degeneration diseases.

"(3) To avoid the duplication of names for the same disease.

"(4) To acquaint all workers with degeneration diseases which are already described by other workers, but do not occur in their own localities.

"(5) A round table discussion of the above points in relation to potato seed production."

MOSAIC DESTRUCTIVE TO MARYLAND POTATOES

During the past few years mosaic has been rapidly increasing in the

McCormick potato, a very popular variety in Maryland. Each year, in spite of efforts to eradicate it by roguing, the percentage and severity of the disease has increased and the yield has steadily declined. Owing to the exceptionally heavy losses last year many farmers gave up planting the variety, but others, although advised that it would be unprofitable, planted them. The result was that in many fields the plants were so few, dwarfed, and curled that it did not pay to cultivate them and they were abandoned. Some fields were even plowed up and other crops grown, but many were left to grow up in weeds. Although cultivation was continued in a few of the best fields, even in those the yield will be very low. The season apparently marks the end of these native strains of McCormick potatoes in Maryland's more important potato sections.

Two promising ways of coping with the situation are being tested. In the first place the Jersey Red Skin potato, which originated in southern New Jersey and which has many of the advantages of the McCormick, but which has the disadvantage of being red in color and undesirable in shape, has been planted with good results. The plants look well, the yields are favorable, and in general it promises to be a good substitute for the McCormick, although as just mentioned, its color and shape are against it. In the second place, a strain of the McCormick variety was found in Pennsylvania last year and has been planted on about 14 farms in Worcester and Howard Counties. This strain shows only about 4% mosaic this year, and its appearance and yield in comparison with the native strains are very striking. If this strain can be kept reasonably free from the disease in Maryland, it will offer a solution of the problem. (R. A. Jehle and R. J. Haskell, Sept. 24)

NOTES ON SPINDLE TUBER OF POTATO

Ohio: Present in fields except from those planted with disease free seed. (Tilford, Sept. 1)

Wisconsin: Showing up in some strains of Green Mountain. Cannot be distinguished on Triumph although seed planted in Louisiana shows some of this disease. (Vaughan, Sept. 1)

LATE BLIGHT OF POTATO (PHYTOPHTHORA INFESTANS)

Ohio: Has not been reported to date. (Tilford, Sept. 1)

Wisconsin: Additional reports from Barron and Manitowoc Counties. Dry weather lately is probably responsible for holding the disease in check. The Manitowoc case was near Lake Michigan in vicinity of heavy fogs. (Vaughan, Sept. 1)

RHIZOCTONIA INJURY TO POTATO (CORTICIUM VAGUM)

Maryland: Some Rhizoctonia appeared early in the season on the early crop. In a number of fields in Worcester County young sprouts were killed, with a 25% reduction in the stand. (Jehle)

Ohio: Very common in fields in northern Ohio. Lesions can be found on the underground parts of a high percentage of plants in some fields. Only occasionally, however, can the sclerotia be found on the tubers. (Tilford, Sept. 1)

Washington: Of general occurrence. (Dept. Pl. Path.)

Oregon: General and one of the foremost causes of potato crop yield reductions in the state. (Barss, Sept. 1)

NOTES ON THE EARLY BLIGHT OF POTATO (ALTERNARIA SOLANI)

Maine: Report from Reiner Bonde states that on Green Mountain and other late varieties there is an unusual epidemic. (Folsom, Sept. 17)

Ohio: There is considerable early blight on potatoes in the southern part of the state. The early crop was especially injured by early blight. (Tilford, Aug. 1)

Minnesota: Present in most fields in slight quantities. No destructive outbreaks observed. (Sect. Pl. Path.)

New Mexico: Extremely common at Cloudcroft. Damage considerable. Have just returned from there and find a high percent of blight in all fields. (Crawford, Sept. 1)

BEAN DISEASES IN MICHIGAN

Anthracnose (Colletotrichum lindemuthianum)

"It . made a belated development during August but temperatures were too high for epidemic conditions. Reported by the canning companies as of considerable importance but has not been noted in fields of pea beans to any extent." (Dept. Bot.,Sept. 1)

Blight (Bacterium phaseoli)

"Was held in check by the very dry weather conditions until the onset of rains in early August combined with high temperatures. It developed so rapidly that it ranks as the most important bean disease of the year, however, much less important than last year." (Dept. Bot., Sept. 1)

Rust (Uromyces appendiculatus)

"More than usual. Noted in some fields of pea beans as the cause of severe defoliation. Losses are slight and localized however." (Dept. Bot., Sept. 1)

Mosaic

"Caused widespread losses where susceptible varieties were grown. In general, this year's epidemic of mosaic is not quite so severe as that of last year, but next to blight is causing more loss than any other bean disease." (Dept. Bot., Sept. 1)

FUSARIUM BULB ROT OF ONION DESTRUCTIVE IN WESTERN ONION SECTION

Washington: This disease has been common and severe in the early onion section of the Walla Walla district. Its importance has been mentioned in reports of other years. It has not caused such large losses as in other years due partly to spring onions being generally planted because of the general killing out of winter onions last winter. (Dept. Pl. Path., Sept. 15)

CUCUMBER DISEASES AS REPORTED FOR MICHIGAN AND WISCONSIN

Angular leafspot (Bacterium lachrymans)

Michigan: Developed early on the foliage in some fields but apparently checked by unfavorable weather conditions so that no fruit infections occurred. Seed treatment reported as not entirely effective. (Dept. Bot., Sept. 1)

Wisconsin: More than for several years. (Vaughan, Sept. 1)

Scab (Cladosporium cucumerinum)

Michigan: Next to mosaic the most important cucumber disease of the year. Reported by the pickling companies as destructive and general. Losses run as high as 20 to 50% in some sections. (Dept. Bot., Sept. 1)

Wisconsin: More reports than ever before. One man writes of losing 100 acres in Outagamie County. Cucumbers about village gardens badly diseased in Trempealeau County. We need more research on this disease. (Vaughan, Aug. 15)

Wilt (Bacillus tracheiphilus)

Michigan: Early indications were that this disease would be important again this year but unfavorable conditions for the striped beetle prevented the spread of wilt and it is of minor importance this year. (Dept. Bot., Sept. 1)

Wisconsin: About as usual; scattering plants in many fields, loss - a trace. (Vaughan, Sept. 1)

Mosaic

Michigan: Unquestionably on the increase. Generally reported throughout the state this year in epidemic form. Noted as most severe in those sections where milkweed most abundant. Pickles showing mosaic symptoms are rejected at the salting stations and growers are taking heavy losses. (Dept. Bot., Sept. 1)

Wisconsin: Less than usual. Small amount (5%) of loss this year. (Vaughan, Sept. 1)

COTTON ANTHRACNOSE REPORTS (GLOMERELLA GOSSYPII)

Virginia: Reported from Brunswick County on August 22. (Fromme, Sept. 1)

South Carolina: Have only one record but that is a severe infection, something like 40% of the bolls infected. (Ludwig, Sept. 1)

South Georgia: Much less common than in 1924. Considerable infection took place during first part of July, mostly on leaves. On bolls only in wettest parts of low fields. Generally slight loss. (Boyd, Sept. 1)

Arkansas: Appears to be of little importance this year. Dry weather apparently unfavorable. (V. H. Young, Sept. 1)

NOTES ON THE FUSARIUM WILT OF COTTON (FUSARIUM VASINFECTUM)

South Carolina: Present about as usual. Most of our complaints now come from the Piedmont section. It is more prevalent in the lower sections, without doubt, but farmers and county agents are familiar with it and do not submit specimens. Piedmont section farmers do not know it and consequently submit specimens when it makes its appearance. (Ludwig, Sept. 1)

South Georgia: Loss about the same as in 1924. Few fields showed losses as high as 60 to 75%. Common in resistant varieties on root knot land. The standard resistant varieties holding up well on wilt-infested soils. (Boyd, Sept. 1)

Mississippi: Serious in many localities in the state. Occurs also and becoming serious in the rich, alluvial soils of the Delta which have been continuously planted to cotton for several years. (Neal, Sept. 1)

Arkansas: Prevalent over much of the state, causing serious loss in many sections. Resistant varieties not in use. (V. H. Young, Sept. 1)

ANGULAR LEAFSPOT OF COTTON (BACTERIUM MALVACEARUM)

South Carolina: In general the attack is very light, but one or two rather heavy infections have been found. (Ludwig, Sept. 1)

South Georgia: Only light infection of leaves up to middle of July. Considerable infection the following three weeks, with only very light boll infection. Much less common on both leaves and bolls, as well as branches, than in 1924. (Boyd, Sept. 1)

Oklahoma: More or less plentiful in all fields of the state. Varieties show considerable difference in the extent of injury. In some cases 100% of the plants are infected. Badly diseased leaves fall. Boll infections are soon followed by various other organisms, often resulting in the destruction of the bolls. (Rolfs, Aug. 28)

Arkansas: Common but apparently causing less damage than usual. Boll rotting by secondary invasion not favored by dry weather. (V. H. Young, Sept. 1)

New Mexico: Caused considerable loss to plants in seedling stage. At present is attacking leaves, young squares and bolls. More common than last year. Growers that delinted seed with sulphuric acid are not troubled. (Crawford, Sept. 1)

MALNUTRITION OF COTTON ("RUST")

Mississippi: Cotton rust has been unusually severe this season. In many cases plants were defoliated by August 1. This condition reached an epidemic stage by August 10 in all parts of the state with the exception of the Delta. Potash fertilizer has not controlled rust in all cases. Dry weather has undoubtedly been conducive to the development. (Neal, Sept. 1)

Oklahoma: Common in various sections of the state. In most cases the injury will be slight, however, in others the loss will reach fully 20% of the crop. (Rolfs)

Arkansas: Rather prevalent. (V. H. Young, Sept. 1)

ALTERNARIA LEAFSPOT OF COTTON

Virginia: Specimens from Brunswick County showing Alternaria leafspot which is associated with angular leafspot and red spider injury have been sent in. (Fromme, Sept. 1)

Mississippi: Began to develop about the same time that "Rust" became so prevalent. This fungus appears to be a secondary trouble, getting into the leaf tissues after rust develops and after the plants are weakened by long spells of dry weather. Very prevalent this season. (Neal, Sept. 1)

Arkansas: Very prevalent, resulting in severe defoliation. Appears to be correlated with drouth injury and potash hunger, especially, although commonly attacking weakened tissue. (V. H. Young, Sept. 1)

ASCOCHYTA BLIGHT OF COTTON REPORTED FROM MISSISSIPPI FOR THE FIRST TIME

"This disease (Ascochyta gossypii) was reported in August from Lowndes County near Columbus, and was observed by the writer. A small area in this particular field was infected. The damage, however, to infected plants was 100%, as in many cases the plants were killed from the tops about two-thirds of the way down the stalk. This is the first report of Ascochyta blight of cotton in Mississippi." (Neal, Sept. 1)

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